I claim

1. A process for preparing a demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin,

the process comprising a conversion step, the conversion step comprising contacting a porous strong base anion exchange resin in a salt form with a sufficient amount of an iodine-substance absorbable by the anion exchange resin such that the anion exchange resin absorbs said iodine-substance so as to convert the anion exchange resin to the demand disinfectant resin, said iodine-substance being selected from the group comprising $I_2$ and polyiodide ions having a valence of -1,

characterized in that for the conversion step at least a portion of the absorption of iodine-substance is effected at elevated temperature and at elevated pressure, said elevated temperature being higher than 100° C, said elevated pressure being greater than atmospheric pressure.

2. A process as defined in claim 1 wherein said elevated pressure is a pressure of 2 psig or greater.

3. A process as defined in claim 1 wherein said elevated pressure is a pressure of 5 psig or greater.

4. A process as defined in claim 3 wherein said elevated pressure is a pressure of up to 100 psig.

5. A process as defined in claim 1 wherein said elevated pressure is a pressure of from 5 to 35 psig.

6. A process as defined in claim 1 wherein said elevated pressure is a pressure of from 5 to 20 psig.

7. A process as defined in claim 1 wherein said elevated temperature is a temperature of 102° C or higher.

8. A process as defined in claim 1 wherein said elevated temperature is a temperature of 115° C or higher.

9. A process as defined in claim 1 wherein said elevated temperature is a temperature of from 115° C to 135° C.

10. A process as defined in claim 1 wherein said elevated temperature is a temperature of 102° C or higher and said elevated pressure is a pressure of 5 psig or greater.

11. A process as defined in claim 10 wherein said elevated temperature is a temperature of up to 210° C.

12. A process as defined in claim 1 wherein said elevated temperature is a temperature of 110° C or higher and said elevated pressure is a pressure of 5 psig or greater.

13. A process as defined in claim 12 wherein said elevated temperature is a temperature of up to 150° C.

14. A process as defined in claim 12 wherein said elevated temperature is of from 115° C to 135° C.

15. A process as defined in claim 1 wherein said elevated temperature is a temperature of 115° C or higher and said elevated pressure is a pressure of from 5 to 35 psig.

16. A process as defined in claim 15 wherein said elevated temperature is a temperature of from 115° C to 135° C.

17. A process for preparing a demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin,

the process comprising a conversion step, the conversion step comprising contacting a porous strong base anion exchange resin in a salt form other than the iodide form $I^-$, with a sufficient amount of an iodine-substance absorbable by the anion exchange resin such that the anion exchange resin absorbs said iodine-substance so as to convert the anion exchange resin to the demand disinfectant resin, said iodine-substance being selected from the group comprising polyiodide ions having a valence of -1,

characterized in that for the conversion step at least a portion of the absorption of iodine-substance is effected at elevated temperature and at elevated pressure, said elevated temperature being 100° C or higher, said elevated pressure being greater than atmospheric pressure.

18. A process as defined in claim 17 wherein said iodine-substance comprises triiodide ions of formula $I_3^-$.

19. A process as defined in claim 17 wherein the anion exchange resin is in the chloride form $Cl^-$.

20. A process as defined in claim 17 wherein the anion exchange resin is in the hydroxyl form $OH^-$.

21. A process as defined in claim 17 wherein said elevated pressure is a pressure of 2 psig or greater.

22. A process as defined in claim 17 wherein said elevated pressure is a pressure of 5 psig or greater.

23. A process as defined in claim 22 wherein said elevated pressure is a pressure of up to 100 psig.

24. A process as defined in claim 18 wherein said elevated pressure is a pressure of from 5 to 35 psig.

25. A process as defined in claim 18 wherein said elevated pressure is a pressure of from 5 to 20 psig.

26. A process as defined in claim 18 wherein said elevated temperature is a temperature of 102° C or higher.

27. A process as defined in claim 18 wherein said elevated

temperature is a temperature of 115° C or higher.

28. A process as defined in claim 18 wherein said elevated temperature is a temperature of from 115° C to 135° C.

29. A process as defined in claim 18 wherein said elevated temperature is a temperature of 102° C or higher and said elevated pressure is a pressure of 5 psig or greater.

30. A process as defined in claim 29 wherein said elevated temperature is a temperature of up to 210° C.

31. A process as defined in claim 29 wherein the anion exchange resin is in the chloride form $Cl^-$.

32. A process as defined in claim 29 wherein the anion exchange resin is in the hydroxyl form $OH^-$.

33. A process as defined in claim 18 wherein said elevated temperature is a temperature of 110° C or higher and said elevated pressure is a pressure of 5 psig or greater.

34. A process as defined in claim 33 wherein said elevated temperature is a temperature of up to 150° C.

35. A process as defined in claim 33 wherein said elevated temperature is of from 115° C to 135° C.

36. A process as defined in claim 18 wherein said elevated temperature is a temperature of 115° C or higher and said elevated pressure is a pressure of from 5 to 35 psig.

37. A process as defined in claim 36 wherein said elevated temperature is a temperature of from 115° C to 135° C.

38. A process as defined in claim 37 wherein the anion exchange resin is in the chloride form $Cl^-$.

39. A process as defined in claim 37 wherein the anion exchange resin is in the hydroxyl form $OH^-$.

40. A process as defined in claim 18 wherein the anion exchange resin is a quaternary ammonium anion exchange resin.

41. A process as defined in claim 18 wherein the anion exchange resin is contacted with a composition comprising a mixture of KI, $I_2$ and a minor amount of water, the mole ratio of KI to $I_2$ initially being about 1.

42. A process as defined in claim 18 wherein said anion exchange resin is in the hydroxyl form $OH^-$, wherein the anion exchange resin is contacted with a composition consisting of a mixture of KI, $I_2$ and a minor amount of water, the mole ratio of KI to $I_2$ initially being about 1, wherein said elevated temperature is a temperature of 102° C or higher and wherein said elevated pressure is a pressure of 2 psig or

greater.

43. A process as defined in claim 42 wherein said elevated temperature is a temperature of 115° C or higher and wherein said elevated pressure is a pressure of from 5 to 35 psig.

44. A process for preparing a demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin,

the process comprising a conversion step, the conversion step comprising contacting a porous strong base anion exchange resin in a salt form with a sufficient amount of an iodine-substance absorbable by the anion exchange resin such that the anion exchange resin absorbs said iodine-substance so as to convert the anion exchange resin to the demand disinfectant resin, said iodine-substance being selected from the group comprising $I_2$ and polyiodide ions having a valence of -1,

characterized

in that said conversion step comprises an initial conversion stage followed by a second conversion stage,

in that said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance at a temperature of 100° C or lower so as to obtain an intermediate composition, said intermediate composition comprising residual absorbable iodine-substance and an intermediate iodinated resin,

and

in that said second conversion stage comprises subjecting the intermediate composition to elevated temperature and elevated pressure, said elevated temperature being higher than 100° C, said elevated pressure being greater than atmospheric pressure.

45. A process as defined in claim 44 wherein said elevated pressure is a pressure of 2 psig or greater.

46. A process as defined in claim 44 wherein said elevated pressure is a pressure of 5 psig or greater.

47. A process as defined in claim 46 wherein said elevated pressure is a pressure of up to 100 psig.

48. A process as defined in claim 44 wherein said elevated pressure is a pressure of from 5 to 35 psig.

49. A process as defined in claim 44 wherein said elevated pressure is a pressure of from 5 to 20 psig.

50. A process as defined in claim 44 wherein said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance at a pressure of from 0 to less than 2 psig.

51. A process as defined in claim 50 wherein said elevated pressure is a pressure of 2 psig or greater.

52. A process as defined in claim 50 wherein said elevated pressure is a pressure of 5 psig or greater.

53. A process as defined in claim 52 wherein said elevated pressure is a pressure of up to 100 psig.

54. A process as defined in claim 50 wherein said elevated pressure is a pressure of from 5 to 35 psig.

55. A process as defined in claim 50 wherein said elevated pressure is a pressure of from 5 to 20 psig.

56. A process as defined in claim 44 wherein said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance at a temperature of from 20 to 40° C and at essentially ambient pressure.

57. A process as defined in claim 56 wherein said elevated pressure is a pressure of 2 psig or greater.

58. A process as defined in claim 56 wherein said elevated pressure is a pressure of 5 psig or greater.

59. A process as defined in claim 58 wherein said elevated pressure is a pressure of up to 100 psig.

60. A process as defined in claim 56 wherein said elevated pressure is a pressure of from 5 to 35 psig.

61. A process as defined in claim 56 wherein said elevated pressure is a pressure of from 5 to 20 psig.

62. A process as defined in claim 56 wherein said elevated temperature is a temperature of 102° C or higher.

63. A process as defined in claim 56 wherein said elevated temperature is a temperature of 115° C or higher.

64. A process as defined in claim 56 wherein said elevated temperature is a temperature of from 115° C to 135° C.

65. A process as defined in claim 56 wherein said elevated temperature is a temperature of 102° C or higher and said elevated pressure is a pressure of 5 psig or greater.

66. A process as defined in claim 65 wherein said elevated temperature is a temperature of up to 210° C.

67. A process as defined in claim 56 wherein said elevated temperature is a temperature of 110° C or higher and said elevated pressure is a pressure of 5 psig or greater.

68. A process as defined in claim 67 wherein said elevated temperature is a temperature of up to 150° C.

69. A process as defined in claim 67 wherein said elevated temperature is of from 115° C to 135° C.

70. A process as defined in claim 56 wherein said elevated temperature is a temperature of 115° C or higher and said elevated pressure is a pressure of from 5 to 35 psig.

71. A process as defined in claim 70 wherein said elevated temperature is a temperature of from 115° C to 135° C.

72. A process as defined in claim 44 wherein said first stage is effected for a time period of 1 minute or more.

73. A process as defined in claim 56 wherein said first stage is effected for a time period of 1 minute or more.

74. A process for preparing a demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin,

the process comprising a conversion step, the conversion step comprising contacting a porous strong base anion exchange resin in a salt form other than the iodide form $I^-$, with a sufficient amount of an iodine-substance absorbable by the anion exchange resin such that the anion exchange resin absorbs said iodine-substance so as to convert the anion exchange resin to the demand disinfectant resin, said iodine-substance being selected from the group comprising polyiodide ions having a valence of -1,

characterized

in that said conversion step comprises an initial conversion

stage followed by a second conversion stage,

in that said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance the anion exchange resin with the iodine-substance at a temperature of 100° C or lower so as to obtain an intermediate composition, said intermediate composition comprising residual absorbable iodine-substance and an intermediate iodinated resin,

and

in that said second conversion stage comprises subjecting the intermediate composition to elevated temperature and elevated pressure, said elevated temperature being 100° C or higher, said elevated pressure being greater than atmospheric pressure.

75. A process as defined in claim 74 wherein said iodine-substance comprises triiodide ions of formula $I_3^-$.

76. A process as defined in claim 74 wherein the anion exchange resin is in the chloride form $Cl^-$.

77. A process as defined in claim 74 wherein the anion exchange resin is in the hydroxyl form $OH^-$.

78. A process as defined in claim 74 wherein said elevated pressure is a pressure of 2 psig or greater.

79. A process as defined in claim 74 wherein said elevated pressure is a pressure of 5 psig or greater.

80. A process as defined in claim 79 wherein said elevated pressure is a pressure of up to 100 psig.

81. A process as defined in claim 74 wherein said elevated pressure is a pressure of from 5 to 35 psig.

82. A process as defined in claim 74 wherein said elevated pressure is a pressure of from 5 to 20 psig.

83. A process as defined in claim 75 wherein said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance at a pressure of from 0 to less than 2 psig.

84. A process as defined in claim 83 wherein said elevated pressure is a pressure of 2 psig or greater.

85. A process as defined in claim 83 wherein said elevated pressure is a pressure of 5 psig or greater.

86. A process as defined in claim 85 wherein said elevated pressure is a pressure of up to 100 psig.

87. A process as defined in claim 83 wherein said elevated pressure is a pressure of from 5 to 35 psig.

88. A process as defined in claim 83 wherein said elevated pressure is a pressure of from 5 to 20 psig.

89. A process as defined in claim 75 wherein said initial conversion stage comprises contacting the anion exchange resin with the iodine-substance at a temperature of from 20 to 40° C and at essentially ambient pressure (i.e. a pressure of less than 1 psig to 0 (zero) psig; 0 psig reflecting barometric or atmospheric pressure).

90. A process as defined in claim 89 wherein said elevated pressure is a pressure of 2 psig or greater.

91. A process as defined in claim 89 wherein said elevated pressure is a pressure of 5 psig or greater.

92. A process as defined in claim 91 wherein said elevated pressure is a pressure of up to 100 psig.

93. A process as defined in claim 89 wherein said elevated pressure is a pressure of from 5 to 35 psig.

94. A process as defined in claim 89 wherein said elevated pressure is a pressure of from 5 to 20 psig.

95. A process as defined in claim 89 wherein said elevated temperature is a temperature of 102° C or higher.

96. A process as defined in claim 89 wherein said elevated temperature is a temperature of 115° C or higher.

97. A process as defined in claim 89 wherein said elevated temperature is a temperature of from 115° C to 135° C.

98. A process as defined in claim 89 wherein said elevated temperature is a temperature of 102° C or higher and said elevated pressure is a pressure of 5 psig or greater.

99. A process as defined in claim 98 wherein said elevated temperature is a temperature of up to 210° C.

100. A process as defined in claim 89 wherein said elevated temperature is a temperature of 110° C or higher and said elevated pressure is a pressure of 5 psig or greater.

101. A process as defined in claim 100 wherein said elevated temperature is a temperature of up to 150° C.

102. A process as defined in claim 100 wherein said elevated temperature is of from 115° C to 135° C.

103. A process as defined in claim 89 wherein said elevated temperature is a temperature of 115° C or higher and said elevated pressure is a pressure of from 5 to 35 psig.

104. A process as defined in claim 103 wherein said elevated temperature is a temperature of from 115° C to 135° C.

105. A process as defined in claim 74 wherein said first

stage is effected for a time period of 1 minute or more.

106. A process as defined in claim 89 wherein said first stage is effected for a time period of 1 minute or more.

107. A process as defined in claim 104 wherein the anion exchange resin is in the chloride form $Cl^-$.

108. A process as defined in claim 104 wherein the anion exchange resin is in the hydroxyl form $OH^-$.

109. A process as defined in claim 75 wherein the anion exchange resin is a quaternary ammonium anion exchange resin.

110. A process as defined in claim 75 wherein the anion exchange resin is contacted with a composition comprising a mixture of KI, $I_2$ and a minor amount of water, the mole ratio of KI to $I_2$ initially being about 1.

111. A process as defined in claim 75 wherein said anion exchange resin is in the hydroxyl form $OH^-$, wherein the anion exchange resin is contacted with a composition consisting of a mixture of KI, $I_2$ and a minor amount of water, the mole ratio of KI to $I_2$ initially being about 1 and wherein said elevated temperature is a temperature of 102° C or higher, and wherein said elevated pressure is a pressure of 2 psig or greater.

112. A process as defined in claim 111 wherein said elevated pressure is a pressure of from 2 to 35 psig.

113. A process as defined in claim 111 wherein said first stage is effected for a time period of from 1 minute to 24 hours.

114. A demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin which is the same as an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

115. A demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin whenever prepared in accordance with a process as defined in claim 1.

116. A demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin which is the same as an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

117. A demand disinfectant resin, said disinfectant resin being an iodinated strong base anion exchange resin whenever prepared in accordance with a process as defined in claim 112.

118. A method for disinfecting air containing airborne

microorganisms, said method comprising passing said air over a demand disinfectant resin such that airborne microorganisms contact said resin and are devitalized thereby, said demand disinfectant resin comprising an iodinated strong base anion exchange resin.

119. A method for disinfecting air as defined in claim 118 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 25 to 90 percent by weight of the total weight of the iodinated resin.

120. A method for disinfecting air as defined in claim 118 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 45 to 65 percent by weight of the total weight of the iodinated resin.

121. A method for disinfecting air as defined in claim 118 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

122. A method for disinfecting air as defined in claim 118 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

123. A system for disinfecting air containing airborne microorganisms, said system comprising

means for providing an air path for the movement of air therethrough,

and

a demand disinfectant resin disposed in said air path such that airborne microorganisms in air passing through said air path are able to be brought into contact with said resin and be devitalized thereby,

said demand disinfectant resin comprising an iodinated strong base anion exchange resin.

124. A system for disinfecting air as defined in claim 123 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 25 to 90 percent by weight of the total weight of the iodinated resin.

125. A system for disinfecting air as defined in claim 123 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 45 to 65 percent by weight of the total weight of the iodinated resin.

126. A system for disinfecting air as defined in claim 123 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

127. A system for disinfecting air as defined in claim 123 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

128. A system for disinfecting air as defined in claim 123, said system including means for urging the air through said air path.

129. A system for disinfecting air as defined in claim 123, said system including means disposed in said air path for scavenging iodine liberated from the disinfectant resin.

130. A method for disinfecting a liquid containing microorganisms, said method comprising passing said liquid over a demand disinfectant resin such that microorganisms therein contact said resin and are devitalized thereby, said disinfectant resin being an iodinated strong base anion exchange resin which is the same as an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

131. A method for disinfecting a liquid containing microorganisms, said method comprising passing said liquid over a demand disinfectant resin such that microorganisms therein contact said resin and are devitalized thereby, said disinfectant resin being an iodinated strong base anion exchange resin whenever prepared in accordance with a process

as defined in claim 1.

132. A method for disinfecting a liquid containing microorganisms, said method comprising passing said liquid over a demand disinfectant resin such that microorganisms therein contact said resin and are devitalized thereby, said disinfectant resin being an iodinated strong base anion exchange resin which is the same as an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

133. A method for disinfecting a liquid containing microorganisms, said method comprising passing said liquid over a demand disinfectant resin such that microorganisms therein contact said resin and are devitalized thereby, said disinfectant resin being an iodinated strong base anion exchange resin whenever prepared in accordance with a process as defined in claim 112.

134. A combination comprising

a demand disinfectant component

and

a carrier component,

said demand disinfectant component comprising particles of an iodinated strong base anion exchange resin,

said particles of said demand disinfectant component being held to said carrier component.

135. A combination as defined in claim 134 wherein said particles of said demand disinfectant component are fixed to said carrier component, wherein said carrrier component comprises a flexible polymeric matrix and wherein particles of said demand disinfectant are dispersed in said polymeric matrix.

136. A combination as defined in claim 135 wherein said flexible polymeric matrix is a porous cellular polymeric matrix.

137. A combination as defined in claim 134 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 25 to 90 percent by weight of the total weight of the iodinated resin.

138. A combination as defined in claim 134 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 45 to 65 percent by weight of the total weight of the iodinated resin.

139. A combination as defined in claim 134 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

140. A combination as defined in claim 136 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

141. A sterilisation dressing, for being applied to a lesion, said dressing comprising

a demand disinfectant component

and

a carrier component,

said demand disinfectant component comprising particles of an iodinated strong base anion exchange resin,

said carrier component being configured so as to hold onto particles of said demand disinfectant component such that microorganisms are able to be brought into contact with said particles and be devitalised thereby,

said carrier component being of a pharmaceutically acceptable material.

142. A dressing as defined in claim 141 wherein said carrier component is flexible and has an outer surface and wherein particles of said demand disinfectant are fixed to at least a portion of said outer surface.

143. A dressing as defined in claim 141 wherein said carrier component is flexible and comprises a porous cellular polymeric matrix, wherein particles of said demand disinfectant are dispersed in said polymeric matrix.

144. A dressing as defined in claim 141 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 25 to 90 percent by weight of the total weight of the iodinated resin.

145. A dressing as defined in claim 141 wherein said iodinated strong base anion exchange resin comprises a strong base anion exchange resin component which represents from 45 to 65 percent by weight of the total weight of the iodinated resin.

146. A dressing as defined in claim 141 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 1.

147. A dressing as defined in claim 141 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

148. A dressing as defined in claim 143 wherein said iodinated strong base anion exchange resin is an iodinated strong base anion exchange resin prepared in accordance with a process as defined in claim 112.

149. A method for disinfecting air containing airborne

microorganisms, said method comprising passing said air over a disinfectant resin such that airborne microorganisms contact said resin and are devitalized thereby, said disinfectant resin comprising a disinfectant iodinated resin.

150. A system for disinfecting air containing airborne microorganisms, said system comprising

means for providing an air path for the movement of air therethrough,

and

a disinfectant resin disposed in said air path such that airborne microorganisms in air passing through said air path are able to be brought into contact with said resin and be devitalized thereby,

said disinfectant resin comprising a disinfectant iodinated resin.

151. A combination comprising

a disinfectant component

and

a carrier component,

said disinfectant component comprising particles of an iodinated resin,

said particles of said disinfectant component being held to said carrier component.

152. A sterilisation dressing, for being applied to a lesion, said dressing comprising

a disinfectant component

and

a carrier component,

said disinfectant component comprising particles of an iodinated resin,

said carrier component being configured so as to hold onto particles of said disinfectant component such that microorganisms are able to be brought into contact with said particles and be devitalised thereby,

said carrier component being of a pharmaceutically acceptable material.

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